84-6

LC Science Tracer Bullet

Science Reference Section, Science and Technology Division
Library of Congress, 10 First Street, S.E., Washington, D.C. 20540

NEWARK PUBLIC LIBRARY

ISSN 0090-5232

MAR 1 [illegible]
U. S. DOCUMENTS
[illegible]

OPTICAL DISK TECHNOLOGY
A Brief Guide to Materials in the Library of Congress
Compiled by Sue S. O'Neill and Constance Carter

TB 84-6

December 1984

SCOPE: Optical disks are expected to assume a significant role in information storage in the 1980's and thereafter. Because optical disk storage systems hold the promise of providing the densest and cheapest form of information storage to date, managers are investigating this technology as an economical means for storing and preserving records. Optical disk systems permit mass storage of images--both graphic and digital--which can be coupled with the organizing and retrieval power of a computer. A single disk, for instance, could contain the text of a publication as massive as the Encyclopaedia Britannica.

This compilation lists sources to aid an individual in pursuing the study of optical disk technology through a review of the literature in the collections of the Library of Congress. Not intended to be a comprehensive bibliography, this Tracer Bullet is designed--as the name of the series implies--to put the reader "on target."

INTRODUCTIONS TO THE TOPIC

Goldstein, Charles M. Optical disk technology and information. Science, v. 215, Feb. 12, 1982: 862-868. Q1.S35 and Pamphlet box*

Lunin, Lois F., and Judith Paris, eds. Perspectives on video-disc and optical disc: technology, research and applications. In American Society for Information Science. Journal, v. 34, Nov. 1983: 406-440. Z1007.A477 and Pamphlet box*

White, Robert M. Disk storage technology. Scientific American, v. 243, Aug. 1980: 138-148. T1.S5 and Pamphlet box*

SUBJECT HEADINGS used by the Library of Congress, under which books on optical disk technology can be located in most card, book, and online catalogs, include the following:

OPTICAL STORAGE DEVICES (Highly relevant)
OPTICAL STORAGE DEVICE INDUSTRY (Highly relevant)

best copy available

*Available in the reference collection, Science Reading Room

LC 33.10:

VIDEO DISCS (Highly relevant)
LASER RECORDING (Relevant)
COMPUTER STORAGE DEVICES (Relevant)
COMPUTERS--OPTICAL EQUIPMENT (Relevant)
OPTICAL DATA PROCESSING (Relevant)

BASIC TEXTS

Barrett, Raymond. Further developments in optical disc technology and applications. Boston Spa, Wetherby, West Yorkshire, British Library; distributed by Publications Section, British Library Lending Division, c1984. 35 p. (Library and information research report, 27)
TA1635.B37 1984

----- Optical video disc technology and applications: recent developments in the USA. Boston Spa, Wetherby, West Yorkshire, British Library; distributed by Publications Section, British Library Lending Division, c1982. 43 p. (Library and information research report, 7)
TK6685.B37 1982

Hendley, A. M. The archival storage potential of microfilm, magnetic media and optical data discs: a comparison based on a literature review, conducted by A. M. Hendley on behalf of the British Library BNB Research Fund. Bayfordbury, Hertford, Herts., National Reprographic Centre for documentation, Hatfield Polytechnic, 1983. 77 p. (BNB Research Fund report, no. 10) (NRCd publication, no. 19)
In Process

Horder, Alan. Video discs, their application to information storage and retrieval. 2nd ed. Bayfordbury, Hertford, Herts., National Reprographic Centre for documentation, Hatfield Polytechnic, 1981. 50 p. (British Library Research and Development Department report, no. 5671) (NRCd publication, no. 12)
TK6655.V5H67 1981
Bibliography: p. 47-50.

Isailovic, Jordan. Videodisc and optical memory systems. Englewood Cliffs, N.J., Prentice-Hall, 1984, c1985. 350 p.
TK7895.M4I83 1985

Matthewson, David K. Revolutionary technology: an introduction to the video and digital audio disc. London, Boston, Newnes Technical Books, 1983. 120 p.
TK6685.M37 1983

ADDITIONAL TITLES

Laser beam information systems. William C. House, editor. New York, Petrocelli Books, 1978. 147 p.
TK7895.M4L38

Optical and magnetic disk media. Norwalk, Conn., International Resource Development Inc., 1984. 249 p. (International Resource Development Inc. Report, 620)
HD9696.C63U52726 1984

Optical discs for office automation and electronic publishing. Norwalk, Conn., International Resource Development Inc., 1982. 175 p. (International Resource Development Inc. Report, 191)
HD9696.0672067 1982

Videodisc and optical digital disk technologies and their applications in libraries: a report to the Council on Library Resources, by Information Systems Consultants Inc. Washington, Council on Library Resources, 1985. 191 p. In Process and Pamphlet box*

Walter, Gerry. Video disks in the automated office? Silver Spring, Md., National Micrographics Association, c1982. 126 p. "NMA RS20-1982." TK7895.M4W34 1982

Yu, Francis T. S. Optical information processing. New York, Wiley, c1983. 562 p. TA1630.Y8 1983
Rev. ed. of: Introduction to diffraction, information processing, and holography. [1973]

BIBLIOGRAPHIES

Kobelski, Pamela G. Optical disk storage technology: a bibliography. Monticello, Ill., Vance Bibliographies, 1983. 12 p. (Public administration series: bibliography, P-1320) Z5838.068K62 1983 and Pamphlet box*

Park, James R. A bibliography of the literature on optical storage technology. Washington, U.S. Dept. of Commerce, National Bureau of Standards; for sale by the Supt. of Docs., U.S. Govt. Print. Off., 1983. 174 p. (NBS special publication, 500-107) QC100.U57 no. 500-107 and Pamphlet box*

CONFERENCE PROCEEDINGS

Advances in laser scanning and recording, April 19-20, 1983, Geneva, Switzerland. Leo Beiser, chairman/editor. Bellingham, Wash., SPIE--the International Society for Optical Engineering, c1983. 216 p. (Proceedings of SPIE--the International Society for Optical Engineering, v. 396) TK7882.S3A37 1983

Applications of optical digital data disk storage systems. W. Mike Deese, Marino Carasso, chairmen/editors. Bellingham, Wash., SPIE--the International Society for Optical Engineering, c1984. 111 p. (Proceedings of SPIE--the International Society for Optical Engineering, v. 490) TA1635.A66 1984

National Bureau of Standards/National Security Agency Workshop on Standardization Issues for Optical Digital Data Disk (DD) Technology, 1983, National Bureau of Standards. Proceedings of the National Bureau of Standards/National Security Agency Workshop on Standardization Issues for Optical Digital Data Disk (DD) Technology. Jean B. Freedman, editor. Cosponsored by National Security Agency, Department of Defense. Washington, U.S. Dept. of Commerce, National Bureau of Standards; for sale by the Supt. of Docs., U.S. Govt. Print. Off., 1984. 227 p. (NBS special publication, 500-111) QC100.U57 no. 500-111

Optical data storage: January 17-20, 1983, Incline Village, Nevada. Di Chen, chairman/editor. Cosponsored by American Vacuum Society ... and others. Bellingham, Wash., SPIE--the International Society for Optical Engineering, c1983. 292 p. (Proceedings of SPIE--the International Society for Optical Engineering, v. 382)
TK7895.M40678 1983

Optical disk technology [symposium] January 26-28, 1982, Los Angeles, California. Robert A. Sprague, chairman/editor. Bellingham, Wash., SPIE--the International Society for Optical Engineering, c1982. 260 p. (Proceedings of SPIE--the International Society for Optical Engineering, v. 329) TK7895.M406788 1982

Optical disks systems and applications: June 8-9, 1983, Arlington, Virginia. Edward V. LaBudde, chairman/editor. Sponsored by American Vacuum Society ... and others. Bellingham, Wash., SPIE--The International Society for Optical Engineering, c1983. 174 p. (Proceedings of SPIE--the International Society for Optical Engineering, v. 421) TK7895.M4068 1983

Optical information storage [proceedings] April 17-18, 1979, Washington, D.C. Kenneth G. Leib, editor. Bellingham, Wash., Society of Photo-optical Instrumentation Engineers, c1979. 150 p. (Proceedings of the Society of Photo-optical Instrumentation Engineers, v. 177) TA1635.066

Optical storage media [proceedings] June 6-10, 1983, Arlington, Virginia. Alan E. Bell, Albert A. Jamberdino, chairmen/editors. Sponsored by American Vacuum Society ... and others. Bellingham, Wash., SPIE--the International Society for Optical Engineering, c1983. 351 p. (Proceedings of SPIE--the International Society for Optical Engineering, v. 420) TK7895.M4069 1983
"Cooperating organization, Australian Computer Society committees on CRATER--Computers and Related Technologies in Earth Resources, SIGGRAPH-ACS--Australasian Special Interest Group on Computer Graphics."

LIBRARY OF CONGRESS OPTICAL DISK PILOT PROJECT

Analog video disk system now available to users at LC. Library of Congress information bulletin, v. 43, June 18, 1984: 209-210.
Pamphlet box*

Criswell, Lela Beth. Serials on optical disks: a Library of Congress pilot program. Library hi tech, v. 1, winter 1983: 17-21.
Pamphlet box*

Fleischhauer, Carl. Research access and use: key facet of the nonprint optical disk experiment. Library of Congress information bulletin, v. 42, Sept. 12, 1983: 374-376. Pamphlet box*

Hahn, Ellen. A report on the print project activities. Library of Congress information bulletin, v. 42, Oct. 31, 1983: 374-376.
Pamphlet box*

Nugent, William R. Applications of digital optical disks in library preservation and reference. In National Computer Conference. National computer conference 1983: May 16-20, 1983, Anaheim, California: proceedings. Montvale, N.J., American Federation of Processing Societies, 1983. p. 771-775. (AFIPS, v. 52) Pamphlet box*

Price, Joseph. The optical disk pilot program at the Library of Congress. Videodisc and optical disk, v. 4, Nov./Dec. 1984: 424-432. Pamphlet box*

Thompson, Mark. High-tech libraries. American way, v. 17, Sept. 1984: 36-40. Pamphlet box*

ABSTRACTING AND INDEXING SERVICES that index relevant journal articles and other literature are listed below. Some suggested terms are given as aids in searching.
The following indexes are available in most public and college libraries.

Applied Science & Technology Index (1913-) Z7913.I7*
See: Optical Data Processing
Image Processing
Laser Recording

Business Periodicals Index (1958-) Z7164.C81B983
See: Optical Storage Devices
Laser Recording

READEX FICHE

General Science Index (1978-) Z7401.G46*
See: Optical Data Processing

Magazine Index (1979-) uncataloged
See: Optical Storage Devices
Laser Recording

Readers' Guide to Periodical Literature (1900-) AI3.R45
See: Optical Storage Devices

The following abstracting and indexing services, which should be used for more exhaustive searches, may be available only in large or specialized libraries.

Business Index (1982-) uncataloged
See: Optical Storage Devices
Laser Recording

Computer & Control Abstracts (Science Abstracts--Series C) (1966-) QA76.C548*
See: Optical Storage
Video and Audio Discs

Computer & Information Systems Abstracts (1969-) QA76.I46*
See: Optical Storage

Note: Consult reference librarian for location of abstracting and indexing services in the Science Reading Room.

Electrical & Electronics Abstracts (Science Abstracts--Series B) (1898-) Z5833.E37*
See: Optical Storage Devices
Optical Storage

Engineering Index (1884-) Z5851.E62*
See: Data Storage, Optical

Information Science Abstracts (1966-) Z699.A1D6*
See: headings beginning Optical Disc

Journal of Current Laser Abstracts (1964-) TK7871.3.J65*
See: D:43, Recording Systems, Data Storage, Display

Library & Information Science Abstracts (1969-) Z671.L6
See: Optical Discs

JOURNALS that often contain articles on optical disc technology are

Byte QA76.5.B9
Datamation T175.M26
EDN (formerly Electrical Design News) TK1.E266
Electronic Design TK7800.E437
Electronics Week (formerly Electronics) TK7800.E4384
Videodisc and Optical Disk (formerly Videodisc/Videotex) TK5105.V52
Videodisc and Optical Disk Update uncataloged

SELECTED REPRESENTATIVE JOURNAL ARTICLES

Ammon, G. J. Archival optical disk data-storage. Optical engineering, v. 20, Jan. 1981: 394-398. TR692.5.S65

Barrett, R. Developments in optical disk technology and the implications for information storage and retrieval. Journal of micrographics, v. 15, Jan. 1982: 22-26. TR835.J67

Brody, Herb. Materials for optical storage: a state-of-the-art survey. Journal of micrographics, v. 15, Jan. 1982: 33-37. TR835.J67
Reprinted from Laser focus, v. 17, Aug. 1981.

Edelhart, Mike. Optical discs: the omnibus medium. Technology, v. 1, Nov./Dec. 1981: 42-57. Pamphlet box*
"Premiere issue."

Farkas, David L. The dash for the disk. Modern office procedures, v. 26, July 1983: 58-59, 62, 64. HF5547.A2M6

Free, John. Optical disc can store an encyclopedia. Popular science, v. 221, Aug. 1982: 47-50. AP2.P8

Hopkins, H. H. Diffraction theory of laser readout systems for optical video disks. In Optical Society of America. Journal, v. 69, no. 1, 1979: 4-24. QC350.06

Kenney, George C. An optical disk replaces 25 magnetic tapes. IEEE spectrum, v. 16, Feb. 1979: 33-38. TK1.I15

Panasuk, Curtis. Advanced computer mass storage. Electronic design, v. 32, May 3, 1984: 258, 260-264, 266, 268, 270, 272, 274. TK7800.E437

Rothchild, Edward S. Optical memory: data storage by laser. Byte, v. 9, Oct. 1984: 215-216, 219-222, 224. QA76.5.B9

REPORTS and other types of literature are indexed in the following guides:

Government Reports Announcements & Index (1946-) Z7916.G78*
See: Optical Data Storage Materials

Monthly Catalog of United States Government Publications (1895-) Z1223.A18*
See: Headings beginning Optical Data Processing
Optical Storage Devices

SELECTED TECHNICAL REPORTS

Bjorklund, G. C., and G. Castro. Frequency domain optical storage. Prepared for the Office of Naval Research. San Jose, Calif., IBM Research Laboratory, Dec. 20, 1982. 34 p. AD-A122 886**
"Prepared for publication as a book chapter."

Dommelen, J. V., and others. Characterization of optical non-erasable discs. Eindhoven, Neth., Optical Media Laboratories [Philips Gloeilampenfabrieken N.V.] 1983. [13] p. Pamphlet box*
"O.M.L. 1983-06-22."

Fiorello, Marco. Standards for commercially emerging technologies: a preliminary cost-benefit assessment for the optical digital data disk (OD^3) technology for mass data applications. Prepared for the Institute for Computer Science and Technology, National Bureau of Standards. McLean, Va., Fiorello, Shaw and Associates, Apr. 1984. 88 p. PB84-223593**

Kenney, George, and others. Development of an optical disc recorder: final technical report. Sponsored by Defense Advanced Research Projects Agency. Briarcliff Manor, N.Y., Philips Laboratories, Jan. 1978. 101 p. AD-A050 784**
See particularly "Temperature stress aging of optical disc record media": p. 73-89. Pamphlet box*

Optical memory data storage. Citations from the INSPEC data base, 1975-May 1983. Springfield, Va., National Technical Information Service, May 1983. 105 p. Pamphlet box*
"PB83-864835."

**Aavailable in the reference collection, Science Reading Room

Markvoort, J., and others. Mechanical, environmental and accelerated ageing tests on OML disks. Eindhoven, Neth., Optical Media Laboratories [Philips Gloeilampenfabrieken N.V.] 1984. [4] p.
"AR90-593." Pamphlet box*

Verhoeven, J. A. Th. Digital optical recording and data integrity. [Eindhoven, Neth., Optical Storage International, 198? 17 p.] Pamphlet box*

SELECTED MATERIALS available in the Science Reading Room pamphlet boxes include:

Bell, A. E. Optical storage technology. Computer design, v. 22, Jan. 1983: 133-146.

Boss, Richard W. Optical digital disks as mass storage media. Videodisc, videotext, v. 3, no. 2, 1982: 127-132.

Copeland, George. What if mass storage were free? Computer, v. 15, July 1982: 27-35.

Lemley, Brad. Preserving the past on disk. PC, v. 4, June 25, 1985: 199-200, 202, 204, 210-212.

McLeod, Jonah. Optical disk storage technology--new materials, new methods. Optical spectra, v. 15, Nov. 1981: 54-55.

Rice, Philip, and Richard F. Dubbe. Development of the first optical videodisc. SMPTE journal, v. 91, Mar. 1982: 277-284.

Rothchild, Edward S. Optical memories eye computer markets. High technology, v. 4, Feb. 1984: 26, 28, 30-31.

Walter, Gerry. Are micrographics and optical data disks competing technologies? Journal of micrographics, v. 16, Feb. 1983: 37-39.

ADDITIONAL SOURCES OF INFORMATION

Association for Information and Image Management (AIIM)
1100 Wayne Avenue
Silver Spring, Maryland 20910
Telephone: (301) 587-8202

SPIE--The International Society for Optical Engineering
(Formerly the Society of Photo-Optical Engineering)
P.O. Box 10
Bellingham, Washington 98227-0010
Telephone: (206) 676-3290